20000609.ba v02_n919.bam.20000609

>From ???@??? Fri Jun 9 00:25:34 2000 -0500
Message-Id: <200006090523.e595Naj20654@sco.theporch.com>
Date: Fri, 9 Jun 2000 00:23:14 CDT
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 2919

BOATANCHORS Digest 2919

Topics covered in this issue include:

1) FS: Johnson Valiant
   by brian.k.harris@philips.com
2) Re: BIG A NOT PC WITH OT'S
   by Arden Allen <gumbear@pacbell.net>
3) Swan's song significant ?
   by Stanley A Mcintosh <mcintos@basf-corp.com>
4) more test gear FS
   by Bob Roehrig <broehrig@admin.aurora.edu>
5) Millen Manual Needed
   by Merz Donald S <merz.ds@mellon.com>
6) Product detector in 1963 QST
   by thompson@mindspring.com
7) Re: BIG A NOT PC WITH OT'S
   by Al Klase <skywaves@bw.webex.net>
8) BIG A NOT PC WITH OT'S
   by michael watts <wy6k@yahoo.com>
9) Green/Gray/Black alphabet soup
   by Arden Allen <gumbear@pacbell.net>
10) Quick and Dirty SP-600 Audio Modifications
   by "Ed Sieb" <sieb@sympatico.ca>
11) Re: BIG A NOT PC WITH OT'S
   by Bob Roehrig <broehrig@admin.aurora.edu>
12) Re: Quick and Dirty SP-600 Audio Modifications
   by Bob Roehrig <broehrig@admin.aurora.edu>
13) RE: Quick and Dirty SP-600 Audio Modifications
   by "Ed Sieb" <sieb@sympatico.ca>
14) Re: SOLVENTS & PAINTS
   by "Barry L. Ornitz" <ornitz@tricon.net>
15) S-38C receiver
   by John Mac Aulay <jmac6235@yahoo.com>
16) Larry Ware's email?
   by Al Parker <anchor@coastalnet.com>
17) FS Viking II and 122 VFO
   by George Folse <kb5wwo@bellsouth.net>
18) Electrolytic Capacitors

    by "Barry L. Ornitz" <ornitz@tricon.net>
19) RE: Quick and Dirty SP-600 Audio Modifications
    by "Bill Hawkins" <bill@iaxs.net>
20) Re: BIG A NOT PC WITH OT'S
    by Arden Allen <gumbear@pacbell.net>
21) Re: Swan's song significant ?
    by "Steve" <scb@fly.hiwaay.net>
22) Re: Quick and Dirty SP-600 Audio Modifications
    by Arden Allen <gumbear@pacbell.net>

```
From: brian.k.harris@philips.com
To: Old Tube Radios <boatanchors@theporch.com>
Subject: FS: Johnson Valiant
Message-ID: <0056910005426057000002L172*@MHS>
Date: Thu, 8 Jun 2000 10:11:02 -0500
MIME-Version: 1.0
Content-Type: text/plain; charset=iso-8859-1; name="MEMO 06/08/00 10:17:29"
Content-Transfer-Encoding: quoted-printable
Content-Disposition: inline
```

For Sale: Johnson Viking Valiant (that needs to be removed from my kitc=
hen table!)

The front panel is good but the edges have the usual scratches.

The cabinet is straight but needs painting. It has the long screws and=
 most of the rear apron screws.

It is missing the original crystal cover but it has a replacement that =
is not painted, but has a nice aluminum knob.

The knobs need cleaning and one or two could use buffing. All have the=
ir original white pointers.

There is a T/R relay installed and, therefore, an extra SO-239 added to=
 the rear apron

There is an extra pot installed on the right side of the chassis, adjac=
ent to R22, the bias pot. I don't know the purpose of this pot but the=
 work was done well.

There has been some recapping in the audio section to increase fidelity=
.=20

The 866's have been replaced with solid state diodes soldered on the bo=
ttom of one 866 tube socket.

There had been mods done to the original mic, key and phone patch conne=
ctors. I removed these and put things back to original. The exception=
 is that the phone patch coax cable, which normally attaches to an RCA =
phone jack, was cut (not by me) 2" too=20
short to reach the new phone jack. If you feel a need to do phone patc=
hes, you can add 2" of coax.

I removed the rotten line cord and have not replaced it. This gives yo=
u the option of making it original with a fused plug or to install an i=
nternal fuse (like should have been done in the first place, in my opin=
ion). I'll include a fused plug with=20
cord. =20

With a suicide cord and a Variac, I reformed the capacitors and verifie=
d the HV, LV and bias supplies are working. It has all the tubes (exce=
pt the 866's).

I am asking $225 for this transmitter, as is. If there are no takers, =
I'll put a new line cord on it and massage it until it puts out well mo=
dulated RF, at which point the price will increase. Local pickup in Da=
llas would be nice, but I will ship this=20
unit (at your expense) and, yes, I know how to pack heavy things so the=
y will survive UPS.

I will not have email capability from 1:00 pm CDST Thursday, the 8th, u=
ntil 9:00 am Monday, the 12th, so if you don't hear from me, don't be c=
oncerned.=20

73,=20

Brian Harris WA5UEK
Plano, Texas (near Dallas) =20

=

Date: Thu, 08 Jun 2000 09:37:26 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Re: BIG A NOT PC WITH OT'S
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <0FVU00LVBGV7S4@mta6.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Hi John;

> Low distortion in detector/af stages (e.g. by proper gain distribution & control, and sufficient linearity, frequency response & dynamic range, low self noise) will make sure that QRN & QRM will be gracefully handled by them, i.e. won't intermodulate, or cause overload or harmonic distortion on the signal you want to hear. These kinds of distortions will actually *add* QRN/M to the desired signal.

You are pointing in the right direction for finding sources of distortion in a receiver. Except for the effects of post detection noise limiters it is hard to build an audio amp and output circuit that can't do a decent job of reporting the results of what comes before the detector. A classical example is the R390/R390A audio quality comparison. The R390 is regarded to have superior audio because of its cascaded IF transformer bandwidth forming method as opposed to the "lumped" approach of the R390A's mechanical filters. There is nothing inherently wrong with using a lumped filter other than the difficulty of building one that doesn't do serious harm to the phase and amplitude linearity of the signal passing through. In addition, AGC system dynamic response characteristics, IF amplifier non-linearity (low overhead) and instability (tendency to self oscillate), IF transformer core induced distortion, and very importantly, detector induced distortion due to poor design, are the main culprits in receivers that suffer from poor quality audio. An example of a receiver that is capable of excellent audio is the Hammarlund SP-600. After converting the detector driver/limiter to a high linearity driver amplifer the signal quality at the output of the detector is excellent. That is due to the high quality of the circuits that precede the detector driver. Some things to think about before "hi-fi'ing" that receiver.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

From: Stanley A Mcintosh <mcintos@basf-corp.com>
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <852568F8.005B4702.00@basf-corp-gw01.basf-corp.com>
Date: Thu, 8 Jun 2000 12:44:50 -0400
Subject: Swan's song significant ?
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

>>Reading John's comments on SSB audio, below, I recalled once owning a Swan 240 with an exceptionally clean sound. I assumed it came from a wider-than-later xtal filter, and thought it might have been nice when sweet sounding 'phasers and wide pass filter rigs ruled.

Got to throw in my $0.02 here. I have a Swan 500CX and a HW-101. I thought the '101 sounded good until I got the 500CX. Most of my work then was casual QSO'ing with my brother on 75m SSB. The 500CX made the '101 sound awful.

72
stan

Date: Thu, 8 Jun 2000 12:13:25 -0500 (CDT)
From: Bob Roehrig <broehrig@admin.aurora.edu>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: more test gear FS
Message-ID: <Pine.OSF.3.96.1000608110620.7668C-100000@admin.aurora.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

4 items this time:

1) H-P 5325B Universal Counter (with manual). 7 digit Nixie readout. Freq to 20 MHz. Also has period & time interval modes. Very good condition. $25.00 plus shipping.
   Picture available at www.aurora.edu/~broehrig/ctr.JPG

2) General Radio 1232A Tuned amplifier & null detector. Can be used as flat response amp, tuneable 20 Kz to 20 kHz, or fixed tuned at 50 or 100 kHz. Meter switchable either linear or log scales. Good condition. Small regulated supply built-in to replace strange sized batteries. $10.00 plus shipping. Picture available at www.aurora.edu/~broehrig/1232.JPG

3) True RMS meter ranges .5, 5, 25, 50, 100V. Takes complex audio waveform and converts to true RMS. This is home brew by AT&T engineer using rather expensive special IC. Condition excellent. $20.00 plus shipping
   Picture available at www.aurora.edu/~broehrig/rms.JPG

4) Grason-Stadler noise generator. Generates white noise. Has 600 ohm output and 20 or 200 kHz switchable lowpass filter. $10.00 plus shipping. Picture at www.aurora.edu/~broehrig/noise.JPG

"Nostalgia is a thing of the past"
E-mail: broehrig@admin.aurora.edu or k9eui@arrl.net   73 de Bob, K9EUI
CIS: Data / Telecom   Aurora University, Aurora, IL
630-844-4898 Fax 630-844-4222
PLEASE PUT ALL REPLIES IN ASCII TEXT ONLY

Message-ID: <20000608184056.21586.qmail@mellon.com>
From: Merz Donald S <merz.ds@mellon.com>
To: Old Tube Radios <boatanchors@theporch.com>

Subject: Millen Manual Needed
Date: Thu, 8 Jun 2000 14:36:39 -0400
MIME-Version: 1.0
Content-Type: text/plain

I need a manual copy for a Millen 90932 monitor oscilloscope. Any help appreciated.
73, Don Merz, N3RHT

From: thompson@mindspring.com
Message-ID: <000201bfd17d$e4cfbd00$411756d1@default>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Product detector in 1963 QST
Date: Thu, 8 Jun 2000 15:08:58 -0400

I researching the GPR-91 for a Canadian SWL friend he mentioned that he had his engineers build a product detector
he found in QST (Oct 1963).   In looking at the circuit I went to the circuit found in a Hammarlund HQ120 that I purchased
last year from the estate of a retired Hammarlund Chief Engineer.   The product detector seemed built in so when I switched to CW
it replaced the original circuit.   I have two toggle switches on the front panel of the 120 and one is for a 100kcs calibrator but the other
seems inoperative.   I think originally he used the switch to bring in the product detector.   The QST article replaced the old detector with the new circuit.   All work is first class and I guess he decided not to leave a hole in the panel so he left the switch. He left a note
on the front panel (3X5 card) with notes that have long since smudged but the call W2DUD is clearly visible and that is the call of the QST author. The circuit HAS A 6BE6 detector ands a 12AT7 BFO and it appears that it can be installed without changes to virtually any old receiver by plugging into the original diode detector. W2DUD used it with an HRO 50.

Plenty of good reading in the Oct 1963 QST including using the ART 13 on SSB, a nice 6 meter SSB TX, another Lew McCoy article on "updating " the novice gallon, and there is a pic of me as K5MDX at my now BA station on page 71.   Gosh, why did I trade that gear away?????

73 Dave K4JRB

Message-ID: <39400C78.708C8468@bw.webex.net>
Date: Thu, 08 Jun 2000 17:13:28 -0400
From: Al Klase <skywaves@bw.webex.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Old Tube Radios <boatanchors@theporch.com>

Subject: Re: BIG A NOT PC WITH OT'S
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Arden Allen wrote:

> ..... An example of a receiver that is
> capable of excellent audio is the Hammarlund SP-600. After converting the
> detector driver/limiter to a high linearity driver amplifer the signal
> quality at the output of the detector is excellent...

Arden,
Can you provide details.
73,
Al

--
Al Klase - N3FRQ
skywaves@bw.webex.net
Flemington, NJ 08822
Web Page: http://www.webex.net/~skywaves/home.htm

Message-ID: <20000608212104.15889.qmail@web3203.mail.yahoo.com>
Date: Thu, 8 Jun 2000 14:21:04 -0700 (PDT)
From: michael watts <wy6k@yahoo.com>
Subject: BIG A NOT PC WITH OT'S
To: Old Tube Radios <boatanchors@theporch.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

I would like to see these details too, please.

The audio from my R390A seems really good. Do others
consider it good?

Mike

____
Do You Yahoo!?
Yahoo! Photos -- now, 100 FREE prints!
http://photos.yahoo.com

Date: Thu, 08 Jun 2000 14:36:44 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Green/Gray/Black alphabet soup
To: Old Tube Radios <boatanchors@theporch.com>

Message-id: <0FVU00ECLUZDEL@mta6.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Troops;

Someone off list gave me a link to check out and I found this. Mebbe
useful to someone.

Arden Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net

From: "Ed Sieb" <sieb@sympatico.ca>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: <skywaves@bw.webex.net>
Subject: Quick and Dirty SP-600 Audio Modifications
Date: Thu, 8 Jun 2000 18:27:41 -0400
Message-ID: <LOBBJHOLOOHLIPLONIAFIEBMCPAA.sieb@sympatico.ca>
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Quick and Dirty SP-600 Audio Modifications
by Chuck Rippel, WA4HHG

Change C141 and C142 to 100 pF, polystyrene.
Change C143 to a 0.01 uF, polystyrene.
Change C148 to a 0.01 uF, polyester.
Change C149 to a 10 uF, electrolytic.
Change C151 to a 20-30 uF, electrolytic.
Add a 0.01 uF, 630 V off the bottom of the primary of the output
transformer to ground.
Change R62, R63, R64, R65, R81, R82, R83, R98, R99 to metal film types.

from http://www.thebizlink.com/am/tech/htm/sp600aud.htm
"AM Window" web site

And there are a few others.

 Ed
VA3ES

Date: Thu, 8 Jun 2000 19:07:33 -0500 (CDT)
From: Bob Roehrig <broehrig@admin.aurora.edu>
To: Old Tube Radios <boatanchors@theporch.com>

```
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: BIG A NOT PC WITH OT'S
Message-ID: <Pine.OSF.3.96.1000608190540.28112A-100000@admin.aurora.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 8 Jun 2000, Al Klase wrote:

> Arden Allen wrote:
> >
> >.....  An example of a receiver that is
> > capable of excellent audio is the Hammarlund SP-600.  After converting the
> > detector driver/limiter to a high linearity driver amplifer the signal
> > quality at the output of the detector is excellent...
>
> Arden,
>    Can you provide details.
> 73,
> Al

Yeah, I'd be interested too. I was thinking today (and looking over the
schematic) of my SP-600. I have never had a good speaker on it, just a
4 inch job, but I don't think the response has much in the way of lows.
I am going to run some tests and see what the whole receiver shows.

                    "Nostalgia is a thing of the past"
    E-mail: broehrig@admin.aurora.edu or k9eui@arrl.net   73 de Bob, K9EUI
            CIS: Data / Telecom   Aurora University, Aurora, IL
                      630-844-4898  Fax 630-844-4222
                 PLEASE PUT ALL REPLIES IN ASCII TEXT ONLY

------------------------------
Date: Thu, 8 Jun 2000 19:33:08 -0500 (CDT)
From: Bob Roehrig <broehrig@admin.aurora.edu>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>, skywaves@bw.webex.net
Subject: Re: Quick and Dirty SP-600 Audio Modifications
Message-ID: <Pine.OSF.3.96.1000608193147.17269A-100000@admin.aurora.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 8 Jun 2000, Ed Sieb wrote:

> Quick and Dirty SP-600  Audio Modifications
> by  Chuck Rippel, WA4HHG
>
> Change C141 and C142 to 100 pF, polystyrene.
> Change C143 to a 0.01 uF, polystyrene.
```

> Change C148 to a 0.01 uF, polyester.
> Change C149 to a 10 uF, electrolytic.
> Change C151 to a 20-30 uF, electrolytic.
> Add a 0.01 uF, 630 V off the bottom of the primary of the output
> transformer to ground.
> Change R62, R63, R64, R65, R81, R82, R83, R98, R99 to metal film types.

Looks to me like you have C148 and C149 reversed.

"Nostalgia is a thing of the past"
E-mail: broehrig@admin.aurora.edu or k9eui@arrl.net   73 de Bob, K9EUI
CIS: Data / Telecom   Aurora University, Aurora, IL
630-844-4898 Fax 630-844-4222
PLEASE PUT ALL REPLIES IN ASCII TEXT ONLY

From: "Ed Sieb" <sieb@sympatico.ca>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Old Tube Radios" <boatanchors@theporch.com>
Subject: RE: Quick and Dirty SP-600 Audio Modifications
Date: Thu, 8 Jun 2000 21:03:07 -0400
Message-ID: <LOBBJHOLOOHLIPLONIAFMEBNCPAA.sieb@sympatico.ca>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Hi Bob, and gang,

Looks like you're a lot more familiar with the S-P600
than I am, (which is a certainty). I only copied the
instructions as I found them. Caveat Emptor.

Chuck Rippel's 3 hour video on the secrets of the
SP-600 will have even more info.

Ed

> -----Original Message-----
> From: Bob Roehrig [mailto:broehrig@admin.aurora.edu]
> Sent: Thursday, June 08, 2000 8:33 PM
> To: Ed Sieb
> Cc: Old Tube Radios; skywaves@bw.webex.net
> Subject: Re: Quick and Dirty SP-600 Audio Modifications
>
>

> On Thu, 8 Jun 2000, Ed Sieb wrote:

  <snip>
> > Change C148 to a 0.01 uF, polyester.
> > Change C149 to a 10 uF, electrolytic.
<snip>

> Looks to me like you have C148 and C149 reversed.
>
> 73 de Bob, K9EUI
>

Message-ID: <00cc01bfd1b3$bac9c600$685f62d8@naxs.com>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: SOLVENTS & PAINTS
Date: Thu, 8 Jun 2000 21:40:43 -0400
MIME-Version: 1.0
Content-Type: text/plain;
     charset="utf-8"
Content-Transfer-Encoding: 7bit

John Sehring, WB0EQ, wrote:
> This discussion got me thinking about comparing the factory paint on
BA's.
> Best: R.L. Drake front panels

If I remember correctly the 2B front panel was painted, but the R-4 and
R-4A(B,C) had anodized front panels. Pretty much noting other than strong
acid, caustics, or abrasives attack anodized finishes.

        73, Barry   WA4VZQ   ornitz@tricon.net

Message-ID: <20000609015417.12318.qmail@web122.yahoomail.com>
Date: Thu, 8 Jun 2000 18:54:17 -0700 (PDT)
From: John Mac Aulay <jmac6235@yahoo.com>
Subject: S-38C receiver
To: Old Tube Radios <boatanchors@theporch.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

I brought home a Hallicrafers S-38C from the Dayton
Hamvention and then located an Operation and Service
Manual for it. So good so far. Problem is the manual
is for an "S-38C Run 2" and the receiver has "Run 4"
stamped on the back of the chassis.

Can anyone tell me the difference between "Run 2" and
"Run 4" of this receiver?

Thanks & 73
Mac
WQ8U

____
Do You Yahoo!?
Yahoo! Photos -- now, 100 FREE prints!
http://photos.yahoo.com

Message-Id: <3.0.6.32.20000608214726.008cde40@mail2.coastalnet.com>
Date: Thu, 08 Jun 2000 21:47:26 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Al Parker <anchor@coastalnet.com>
Subject: Larry Ware's email?
Mime-Version: 1.0
Content-Type: text/plain; charset="iso-8859-1"
Content-Transfer-Encoding: 8bit

Sorry for the noise, but I think Larry changed his email recently, & I
didn't save it. Anyone help? Larry? his old address bounces.
tnx,

Al, W8UT
New Bern, NC
BoatAnchors appreciated here
anchor@coastalnet.com

And remember; "-They don¥t make tubes nowadays like they used to..."

Message-ID: <394054EC.4BB009FE@bellsouth.net>
Date: Thu, 08 Jun 2000 21:22:36 -0500
From: George Folse <kb5wwo@bellsouth.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Boatanchors <boatanchors@listserv.tempe.gov>
Subject: FS Viking II and 122 VFO
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

All,
Viking II in ex working condition,has a few scratches on the face
panel,cabinet has been repainted with the matching paint from R&R.
Overall it is and 8. VFO does not work,had not had a chance to check it

out to see why. $250 plus shipping from 70053.
Thanks,
George

Message-ID: <014901bfd1bf$c525a2c0$685f62d8@naxs.com>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Electrolytic Capacitors
Date: Thu, 8 Jun 2000 23:06:55 -0400
MIME-Version: 1.0
Content-Type: text/plain;
    charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have sent files going into much more detail to many readers who requested them, but let me add a little here to clarify the discussions on multi-section electrolytics.

In an electrolytic capacitor, the anode foil (positive lead) is the one that the oxide film is grown upon. This film is formed before the capacitor is wound, but after winding the capacitor is reformed to repair any damage done in the winding process. The cathode of the capacitor is the liquid electrolyte which is absorbed in the separator layer. The other foil, the negative lead, serves only to make contact with the solution. The actual capacitor dielectric is the thin oxide layer grown on the anode foil.

So, in a multi-section capacitor, the negative lead can be one common foil but usually this is not done. But each section will have separate anode foils and separators. If a common separator is used, electrolytic action will take place between sections which is not desired.

Electrolytic capacitors certainly CAN explode if enough current is dumped through them when they short. This is why capacitors are generally individually fused when used in really large capacitor banks, and is why those large computer-grade electrolytics have rubber plugs to allow them to vent.

Early tantalum capacitors of the "wet-slug" variety used sulfuric acid in the electrolyte. This sometimes corroded the cases and made them leak. Encapsulating the cases eliminated most of the leakage problem but tended to cause explosions if the capacitor ever shorted. Modern tantalum electrolytics use a moist paste and are generally dipped in epoxy. They rarely short if used at their rated voltage but can make quite a bang if too much voltage is applied.

When an electrolytic capacitor is left for long periods of time without a polarizing voltage, the anodic film will hydrolyze in the presence of the electrolyte and reduce the capacitor's voltage rating. This chemical reaction is not uniform across the foil, however. If it were, the capacitance would go up as the voltage rating dropped.

Electrolytic capacitors prefer humid air, and the electrolyte often contains hydroscopic materials to absorb moisture from the air and keep the electrolyte damp. An extremely dry environment is damaging to electrolytic capacitors.

73, Barry L. Ornitz   WA4VZQ   ornitz@tricon.net

```
From: "Bill Hawkins" <bill@iaxs.net>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: <skywaves@bw.webex.net>
Subject: RE: Quick and Dirty SP-600 Audio Modifications
Date: Thu, 8 Jun 2000 22:34:04 -0500
Message-ID: <001801bfd1c3$8f397ac0$290aa8c0@darius>
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
```

WARNING: The following information is presented only to provide some perspective to those who do not have extensive experience with the subject of receiver audio quality.

When I first tuned in to r-390@qth.net, it became apparent that Mr. Rippel was an outstanding authority on the R-390A. But there was one small note of discord. He advocated high quality audio from the R-390A by connecting an external hi-fi amplifier and speakers to the diode load terminals of the R-390A using, as I recall, a 680 K resistor in series with a one microfarad capacitor. This put the time constant somewhere around one second.

Uh-oh, I thought, an audiophoole. This may explain some of the choices for the SP-600 "upgrade". Personally, I do not care to hear the effect of AGC on the position of the voice coil in the magnetic gap of the speaker.

Seems to me that we have been across the reasons why communications receivers are not designed for 20-20KHz audio. Many designers took advantage of the 250 Hz low end rolloff to cut corners on the 60 Hz sources in the receiver.

I do not wish to open a discussion of audio tom-foolery. Even the otherwise noisy r-390 group has avoided this issue after it became apparent that no one was going to change their mind.

Regards,
Bill Hawkins

On Thu, 8 Jun 2000, Ed Sieb wrote:

> Quick and Dirty SP-600 Audio Modifications
> by Chuck Rippel, WA4HHG
>

Date: Thu, 08 Jun 2000 21:55:33 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Re: BIG A NOT PC WITH OT'S
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <0FVV00EJCEZY8J@mta6.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Hi again Al;

> >..... An example of a receiver that is
> > capable of excellent audio is the Hammarlund SP-600. After converting the
> > detector driver/limiter to a high linearity driver amplifer the signal
> > quality at the output of the detector is excellent...
>
> Arden,
>   Can you provide details.

Yup. It's a simple, reversible mod. But first I'll describe the stock circuit. V11, a 6BA6 remote cutoff pentode, is employed as a combination detector driver and soft limiter. Looking at the -51 volt bias bus you will find a voltage divider consisting of R95, 82K and R96, 22K. The divider supplies -10 volts of bias to the grid of V11 through R57 to the grid return resistor R56. The somewhat high bias sets the gain of the 6BA6 to a relatively low value for small signals but more importantly the tube is near the point where cutoff begins to rapidly accelerate with an increasingly negative swing of the grid. As the grid swings negative the plate goes in the positive direction which is the drive half of the signal to the detector V14, a 6AL5. Thus large signal excursions like blasts of noise get soft limited by the 6BA6 going into cutoff. Because the signal swing on the plate of the 6BA6 is fairly large for ordinary signal levels there is an audible distortion of the signal envelope that makes the recovered audio sound mushy.

The remedy is to replace the 6BA6 with a 6AU6 sharp cutoff pentode and to improve linearity by utilizing cathode self bias degeneration (negative feedback). Before performing the mod measure the signal level at the plate of V11 with a reliable reference signal such as a signal generator or a broadcast station with a steady signal. Remove R57 and C127. Connect the cold end of R56 to chassis ground. Disconnect the cathode pin 7 and suppresser grid pin 2 from ground and temporarily connect them to a 360 ohm resistor to ground. Replace V11 with a 6AU6. Verify that the signal level at the plate is identical to the level you measured before performing the modification. You may have to adjust the value of the cathode resistor slightly. Use your good ear to check the audio, you should easily hear the improvement in audio fidelity. That's it.

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Message-Id: <200006090507.e5957qG25921@mail.hiwaay.net>
From: "Steve" <scb@fly.hiwaay.net>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Thu, 8 Jun 2000 23:50:29 +0000
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Subject: Re: Swan's song significant ?
CC: Old Tube Radios <boatanchors@theporch.com>

>"Reading John's comments on SSB audio, below, I recalled once owning a Swan 240 with an exceptionally clean sound. I assumed it came from a wider-than-later xtal filter, and thought it might have been nice when sweet sounding 'phasers and wide pass filter rigs ruled."

Greetings;

I generally use a BC-348 to listen to ham band SSB. Most have sounded pretty good, and some even like excellent AM. As this set has a rather broad (915 kc IF) bandpass, I would guess the lattice IF filters in the modern SSB recievers are the main culprit regarding fidelity. Fidelity vs selectivity, as in AM, can't have it both ways in SSB either, apparently.

Regards; Steve

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Date: Thu, 08 Jun 2000 22:04:58 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Re: Quick and Dirty SP-600 Audio Modifications
To: Old Tube Radios <boatanchors@theporch.com>
Cc: skywaves@bw.webex.net
Message-id: <0FVV00E8MG95VM@mta6.snfc21.pbi.net>
MIME-version: 1.0
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Something not right here:

> Change C149 to a 10 uF, electrolytic. .....

I can see increasing the value of C149 to improve bass response but this is nuts!

> Change R62, R63, R64, R65, R81, R82, R83, R98, R99 to metal film types.

IMO, a waste of time and good resistors. If the original carbons are within tolerance no audible improvement will be attained. You're not gonna get <.0237% IMD out of this!!

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